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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/466,982	12/17/1999	WHYNN VICTOR LOVETTE	104421	1810

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EXAMINER	
MISLEH, JUSTIN P	
ART UNIT	**PAPER NUMBER**
2612	

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/466,982	LOVETTE ET AL.	
	Examiner	Art Unit	
	Justin P Misleh	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 9, 11 - 13, and 15 - 23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 9, 11 - 13, and 15 - 23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *6/18/01* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

A Note to the Applicant:

The Examiner authoring this Office Action is newly assigned to the present application.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8 September 2004 has been entered.

Response to Arguments

2. Applicant's arguments filed 8 September 2004 have been fully considered but they are not persuasive.

3. The Applicant argues Chahal does not disclose a signal output to a video channel without an automatic gain control tab. Furthermore, the Applicant states that as shown in figure 1 of Chahal, both channels A and B have gain adjust blocks (automatic gain control tabs) 11, 13.

The Examiner completely disagrees with the Applicant's position. The Applicant is unreasonably assigning labels to the gain adjust blocks 11 and 13 of Chahal to support the argument that Chahal does disclose the claimed limitations. Chahal provides gain adjustment blocks of both Channel A and B; however, that does not necessarily mean that either or both channels are or have automatic gain control tabs simply based upon the fact that an automatic

control tab(s) is not defined by claim language. For instance, Claim 1 recites therein "calibrating for pixel gain by covering a video channel with an automatic gain control tab," however does not specify any of the particulars of such a "tab" as they disclosed in figure 3.

According to the MPEP 2111 [R-1], proper claim interpretation requires that claims are given their broadest reasonable interpretation and that "reading a claim in light of the specification, to thereby interpret limitations explicitly recited in the claim, is a quite different thing from reading limitations of the specification into a claim, to thereby narrow the scope of the claim by implicitly adding disclosed limitations which have no express basis in the claim." It is clear that the Applicant is advocating the latter (i.e., The Applicant is impermissibly importing subject matter from the specification into the claim.).

In addition, turning to pages 6 (lines 20 – 26) and 7 (lines 4 – 9) and figure 3 of the disclosure, "the video channel with the automatic gain control tab" and "the channels without the automatic gain control tab" are not concerned with any kind of gain adjustment on the video channels rather they ensure that an amount of error of pixel gain is zero. In fact, pixel gain is performed in the pixel gain process block 500 as described in figure 4.

In conclusion, it is improper for the Examiner to interpret the automatic gain control tabs as being strictly limited to the particulars of figure 4 without the claim language supporting such an interpretation; hence, the Examiner is free to give automatic gain control tab their broadest reasonable interpretation as will become evident below.

Drawings

4. The drawings are objected to because of an error in labeling a reference sign. More specifically, in figure 3, the "subtraction block" is labeled with reference sign "320" when it is clearly identified on page 6 (line 27) of the specification as reference sign "420."

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the Examiner, the Applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1 and 21** rejected under 35 U.S.C. 102(b) as being anticipated by Chahal et al.

For the purposes of these rejections and based upon the Examiner's response above, "a video channel with an automatic gain control tab" is Video Channel A because Video Channel A is comprised of all the even-numbered pixels of CCD 10 and a "video channel without an automatic gain control tab" is Video Channel B because Video Channel B is comprised of all the odd-numbered pixels of CCD 10.

7. For **Claim 1**, Chahal et al. disclose, as shown in figure 1, a method of calibrating video, comprising:

calibrating at least of pixel offset and pixel gain of a video signal (see abstract and column 3, lines 3 – 39);

calibrating for pixel gain (within gain adjustment block 11) by covering a video channel (Channel A) with an automatic gain control tab (Video Channel A is comprised of even-numbered pixels; see above);

calibrating for pixel gain by multiplying (in gain adjustment block 13) a video signal output (the video signal output from D/A Converters 28 and 29) from an integrator (comprised of Digital Comparator 19; CEL 21; U/D Counters 24 and 25; and D/A Converters 28 and 29), said video signal compensating for pixel error for both a video channel with an automatic gain control tab (Video Channel A) and a video channel without an automatic gain control tab (Video Channel B), with a video signal inputted to video channel other than the video channel covered with the automatic gain control tab (Video Channel B is comprised of odd-numbered pixels; see above).

8. For **Claim 21**, Chahal et al. disclose, as shown in figure 1, an image sensor for use with a document scanner, comprising:

digital hardware that calibrates at least one of pixel offset and a pixel gain of a video signal (see figure 1 and column 3, lines 3 – 39);

an automatic gain control tab that covers a video channel (Video Channel A is comprised of even-numbered pixels; see above); and

an integrator, wherein pixel pain is calibrated for by multiplying (in gain adjustment block 13) a video signal output (the video signal output from D/A Converters 28 and 29) from an integrator (comprised of Digital Comparator 19; CEL 21; U/D Counters 24 and 25; and D/A Converters 28 and 29), said video signal compensating for pixel error for both a video channel with an automatic gain control tab (Video Channel A) and a video channel without an automatic gain control tab (Video Channel B), with a video signal inputted to video channel other than the video channel covered with the automatic gain control tab (Video Channel B is comprised of odd-numbered pixels; see above).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. **Claims 2 – 4, 6, 9, 22, and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chahal et al. view of Frey.

11. As for **Claims 2 and 22**, the claim language differs from Chahal et al. in that the method further includes calibrating for pixel offset by setting a correction range for pixel offset calibration, adjusting an uncalibrated video signal to be within the range, and providing an offset level set point before calibrating pixel gain.

On the other hand, Frey also discloses a method of calibrating video. More specifically, Frey teaches a method of calibrating video comprising calibrating at least one of pixel offset (see figures 2, 7, and 10; active update offset system 40) and pixel gain (see figure 2; signal processor 20, gain table 24, and multiplier 26) of a video signal via digital hardware. Frey further teaches that the method also includes calibrating for pixel offset by setting a range for pixel offset calibration, adjusting an uncalibrated video signal to be within the range, and providing an offset level set point (see figures 2, 7, and 10; offset update 53/55/71/72/73). The predetermined range is defined by the pixels with the largest and smallest offset values (see column 12, lines 1 – 42, and column 14, line 36 – column 15, line 23).

As stated in the abstract of Frey, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to modify the image restoration method and system, disclosed by Chahal et al., by setting a range for pixel offset calibration, adjusting an uncalibrated video signal to be within the range, and providing an offset level set point, as taught by Frey, for the advantage of correcting fixed pattern noise errors in the image sensor.

12. As for **Claim 3**, Frey teaches calibrating for pixel offset by subtracting a current state of offset of a video signal from the offset level set point to provide an error value (see figures 2, 7, 10, and 12; adder 52).

13. As for **Claim 4**, Frey teaches calibrating for pixel offset by applying a variable gain factor to the error value to provide a variable gain/error value (see figures 2, 7, and 12; gain circuit 54).

14. As for **Claim 6**, Frey teaches calibrating for pixel offset by adding the variable gain/error value to a pixel offset value stored in a storage device to provide a specified pixel offset value (see figures 2, 7, and 12; adder 56, memory 58, and voter 80).

15. As for **Claims 9 and 23**, Frey teaches calibrating for pixel gain by setting a range for pixel gain calibration (see figures 2, 7 and 12; gain tables 24), adjusting an uncalibrated video signal to be within the range, and providing for continuing compensation of changes in video intensity (see figures 2, 7 and 12; multiplier 26).

16. **Claims 2 – 9, 11 – 13, 15 – 20, 22, and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chahal et al. view of Johnson et al.

17. As for **Claims 2 and 22**, the claim language differs from Chahal et al. in that the method further includes calibrating for pixel offset by setting a correction range for pixel offset calibration, adjusting an uncalibrated video signal to be within the range, and providing an offset level set point before calibrating pixel gain.

On the other hand, Johnson et al. also disclose a method of calibrating video. More specifically, Johnson et al. teach a method of calibrating video comprising calibrating at least one of pixel offset and pixel gain of a video signal via digital hardware (see figure 1 and 8A, dynamic range extension signal processing DRX 2/20). Johnson et al. further teach calibrating for pixel offset by setting a range for pixel offset calibration, adjusting an uncalibrated video

signal to be within the range, and providing an offset level set point (see figures 1 and 8A; 2-bit ADC 11 logic circuitry 8, offsets 1 – 3, and MUX. 9). A predetermined range is defined by the pixels with the largest and smallest offset values (see column 5, line 59 – column 6, line 38 and column 11, lines 9 – 60).

As stated in the abstract of Johnson et al., at the time the invention was made, it would have been obvious to one with ordinary skill in the art to modify the image restoration method and system, disclosed by Chahal et al., by setting a range for pixel offset calibration, adjusting an uncalibrated video signal to be within the range, and providing an offset level set point, as taught by Johnson et al., for the advantage of extending the dynamic range of digital images.

18. As for **Claim 3**, Johnson et al. teach calibrating for pixel offset by subtracting a current state of offset of a video signal from the offset level set point to provide an error value (see figure 1, 4, BA, BB, and 9A; offsets A – C and output of the 2-bit ADC 11).

19. As for **Claim 4**, Johnson et al. teach calibrating for pixel offset by applying a variable gain factor to the error value to provide a variable gain/error value (see figures 1, 5, 8A, MUX 9, and logic circuitry 8).

20. As for **Claim 5**, Johnson et al. teach, in figure 2, that the variable gain factor is fixed for different trip points.

21. As for **Claim 6**, Johnson et al. teach calibrating for pixel offset by adding the variable gain/error value to a pixel offset value stored in a storage device to provide a specified pixel offset value (see figure 1, output from logic circuitry 8 and offset registers 21 – 23).

22. As for **Claim 7**, Johnson et al. teach the method further includes calibrating for pixel offset by dividing the specified pixel offset value by 16 (see column 11, lines 19 – 60).

23. As for **Claim 8**, Johnson et al. teach calibrating for pixel offset by adding the divided value to the video signal adjusted to be within the range (see figure 1; summer 10).

24. As for **Claims 9 and 23**, Johnson et al. teach calibrating for pixel gain by setting a range for pixel gain calibration (see figures 1, 3, 7, and 8E, and VGA 5), adjusting an uncalibrated video signal to be within the range, and providing for continuing compensation of changes in video intensity.

25. As for **Claim 11**, Johnson et al. teach calibrating for pixel gain by subtracting a current state of gain of a video signal from an automatic gain control tab set point to provide an error value (see figure 7 and column 7, line 50 – column 8, line 33).

26. As for **Claim 12**, Johnson et al. teach the calibrating for pixel gain by inputting the error value into an integrator to apply the error value to a video signal over a period of time (see figure 8E; average high/low gain circuits 401/402).

27. As for **Claim 13**, Chahal et al. disclose, as shown in figure 1, a video signal (output from D/A converter 28) output from the integrator (comparator 19, CEL 21, U/D counter 25) with a video signal inputted to the video channel (Video Channel A) covered with the automatic gain control tab.

28. As for **Claim 15**, Chahal et al., as modified by Johnson et al., teach that calibrating for pixel gain by subtracting a current state of gain of a video signal from a white level set point to provide an error value (see Chahal et al. – figure 1; gain reference to the comparator 19 and Johnson et al. – figure 1, 4, 8A; 8B, and 9A; offsets A – C and pix-gain A/B/C).

29. As for **Claim 16**, Chahal et al., as modified by Johnson et al., teach that calibrating for pixel gain by applying a variable gain factor to the error value to provide a variable gain/error value (see Johnson et al. – figures 1, 5, 8A; MUX. 11 and logic circuitry 8).

30. As for **Claim 17**, Chahal et al., as modified by Johnson et al., teach that the variable gain factor is fixed for different trip points (see Johnson et al. – figure 2).

31. As for **Claim 18**, Chahal et al., as modified by Johnson et al., teach that calibrating for pixel gain by adding the variable gain/error value to a pixel gain value stored in a storage device, to provide a specified pixel gain value (see Johnson et al. – figure 1; output from logic circuitry 8 and offset registers 21 – 23).

32. As for **Claim 19**, Chahal et al., as modified by Johnson et al., teach that calibrating for pixel gain by dividing the specified pixel gain value by 16 (see Johnson et al. – column 11, lines 19 – 60).

33. As for **Claim 20**, Chahal et al., as modified by Johnson et al., teach that calibrating for pixel gain by multiplying the divided value to the video signal adjusted to be within the range (see Johnson et al. – figure 1; summer 10).

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 703.305.8090 (571.272.7313 ~ March 2005). The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 5:00 PM and on alternating Fridays from 8:00 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wendy R Garber can be reached on 703.305.4929. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
February 5, 2005

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